WHAT IS CLAIMED IS:

1. A method of producing a precious metal nanoparticle in a plant comprising:

   (a) selecting a plant growth environment comprising a precious metal source;
   (b) growing a plant in said plant growth environment; and
   (c) isolating said precious metal nanoparticle.

2. The method of claim 1, wherein said precious metal is gold.

3 The method of claim 1, wherein said precious metal is silver.

4. The method of claim 1, wherein said precious metal is platinum.

5. The method of claim 1, wherein said plant is a dicot.

6. The method of claim 5, wherein said dicot is of the division Magnoliophyta.

7. The method of claim 6, wherein said dicot is alfalfa.

8. The method of claim 1, wherein isolating comprises isolating a part of said plant.

9. The method of claim 8, wherein said plant part is a leaf, a stem , or a root.

10. The method of claim 9, further comprising disrupting said plant part by physical, chemical or biological methods.

11. The method of claim 10, wherein the physical methods comprise pressing, grinding, sonication or burning.

12. The method of claim 10, wherein the chemical methods comprise digestion or extraction.

13. The method of claim 10, wherein the biological methods comprise enzymatic degradation or microbial degradation.

14. The method of claim 8, wherein isolating comprises one or more of chromatography, centrifugation or electrophoresis.

15. The method of claim 1, wherein growing comprises planting a seed, a sprout of said plant, or said plant.

16. The method of claim 1, further comprising creating said plant growth environment comprising a precious metal source.

17. The method of claim 16, wherein said plant growth environment is soil or liquid.

18. The method of claim 17, wherein creating said plant growth environment comprises seeding a solid growth medium with a precious metal.

19. The method of claim 18, wherein said solid growth medium is soil or agar.

20. The method of claim 17, wherein creating said plant growth environment comprises mixing a precious metal with a liquid.

21. The method of claim 16, wherein creating said plant growth environment comprises:

(i) selecting an desired particle size; and

(ii) adjusting the precious metal concentration to produce said desire particle size.

22. The method of claim 2, wherein said nanoparticles have one or more of the following characteristics:

(i) crystalline;
(ii) size of between about 2 nm and about 40 nm;
(iii) twinned structure;
(iv) icosahedral structure;
(v) zero valence.

23. The method of claim 3, wherein said nanoparticles have one or more of the following characteristics:

(i) crystalline;
(ii) size of between about 2 nm and 20 nm;
(iii) icosahedral structure;
(iv) dimeric, multimeric or wired;
(v) zero valence.